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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,691	08/19/2003	Kiyoshi Kato	0553-0321.01	5099
7590	01/13/2005			
Edward D. Manzo Cook, Alex, McFarron, Manzo, Cummings & Mehler, Ltd. 200 West Adams St., Ste. 2850 Chicago, IL 60606			EXAMINER NGUYEN, TAN	
			ART UNIT 2818	PAPER NUMBER

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/643,691

Applicant(s)

KATO, KIYOSHI

Examiner

Tan T. Nguyen

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 91-169 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 91-169 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/19/05</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2818

1. The Preliminary Amendment submitted by Applicant on January 7, 2005 has been received.

2. The Information Disclosure Statement submitted by Applicant on August 19, 2003 has been received and entered.

3. Claim 1 has been amended.

Claims 2-90 have been canceled.

New claims 91-169 have been added.

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1, 91-169 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-45 of U.S.

Patent No. 6,646,922 (hereinafter U.S. Pat '922). Although the conflicting claims are not identical, they are not patentably distinct from each other because the differences between claims 1, 91-169 of the present Application from claims 1-45 U.S. Pat. '922 are the Preamble of the current claims directed to the intended use of nonvolatile memory in claims 1-45 of U.S. Pat. '922, and the current claims include the display portion which

Art Unit: 2818

digital camera and mobile telephone inherently include, and the read means, the first write means and the second write means in U.S. Pat. '922 now have been amended to a first circuit, a second circuit and a third circuit which perform the same functions of the read means, the first write means and the second write means.

Regarding claims 1, 98, 106, 114, 122, 130, 138, 146, 154, 162 of the present Application, claims 9, 18, 27, 36, 45 of U.S. Pat. '922 recited a nonvolatile memory having a memory transistor and a reference transistor comprising a read means for electrical reading a threshold voltage of the memory transistor by using a threshold voltage of the reference memory transistor; a first write means for performing electrical write on the memory transistor; a second write means for performing electrical write on the reference memory transistor; wherein the nonvolatile memory would be included in electronic apparatus such as light emitting device, digital still camera, video camera and mobile telephone.

Claims 9, 18, 27, 36 and 45 of U.S. Pat. '922 did not recite a display portion. However, it is well known that digital still camera and mobile telephone include display portion.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the non-volatile memory of U.S. Pat. '922 by providing the display portion and incorporating the non-volatile memory in electronic devices such as digital camera and mobile telephone.

The rationale is as follows: A person of ordinary skill in the art would have been motivated to use the display portion to display the content stored in the non-volatile

Art Unit: 2818

memory, and to use the non-volatile memory in digital camera and mobile telephone to store user's information without the need of refreshing the memory or lost of data.

Claims 2, 11, 20, 29 and 38 of U.S. Pat. '922 recited the first reference voltage is higher the second reference voltage as claimed in claims 91, 99, 107, 115, 123, 131, 139, 147, 155 and 163 of the present application.

Claims 3, 12, 21, 30 and 39 of U.S. Pat. '922 recited the second reference voltage is higher than a threshold voltage of the reference memory transistor as claimed in claim 92, 100, 108, 116, 124, 132, 140, 148, 156 and 164 of the present application.

Claims 4, 13, 22, 31 and 40 of U.S. Pat. '922 recited each of the memory transistor and reference memory transistor has an active region, a charge accumulating region, and a control gate and the charge accumulating region is provided between the active region and the control gate and overlaps the control gate as claimed in claims 93, 101, 109, 117, 125, 133, 141, 149, 157 and 165 of the present application.

Claim 5, 14, 23, 32 and 41 of U.S. Pat. '922 recited each of the memory transistor and reference memory transistor has an active region, a floating gate and a control gate and the floating gate is provided between the active region and the control gate and overlaps the control gate as claimed in claims 94, 102, 110, 118, 126, 134, 142, 150, 158 and 166 of the present application.

Claims 6, 15, 24, 33 and 42 of U.S. Pat. '922 recited each of the memory transistor and reference memory transistor has an active region, a nitride film and a control gate and the nitride film is provided between the active region and the control

Art Unit: 2818

gate and overlaps the control gate as claimed in claims 95, 103, 111, 119, 127, 135, 143, 151, 159 and 167 of the present application.

Claims 7, 16, 25, 34 and 43 of U.S. Pat. '922 recited each of the memory transistor and memory reference transistor has an active region, a cluster layer and a control gate and the cluster layer is provided between the active region and the control gate and overlaps the control gate as claimed in claims 96, 104, 112, 120, 128, 136, 144, 152, 160 and 168 of the present application.

Claims 8, 17, 26, 35 and 44 of U.S. Pat. '922 recited the memory transistor and the reference memory transistor store multilevel information as claimed in claims 97, 105, 113, 121, 129, 137, 145, 153, 161 and 169 of the present application.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yoshioka et al., Landry et al., Tanaka et al. and Oruga et al. are cited to show non-volatile memories are used in cameras and mobile telephones.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan T. Nguyen whose telephone number is (571) 272-1789. The examiner can normally be reached on Monday to Friday from 07:00 AM to 03:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms, can be reached at (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2818

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tan T. Nguyen  
Primary Examiner  
Art Unit 2818  
January 11, 2005